

FY2017 Operations Plan

Version 1.0.0

4 August 2016

Table of Contents

1	INTRODUCTION – THE WIRELESS INNOVATION FORUM FY2017 OBJECTIVES.....	4
2	WIRELESS INNOVATION FORUM ORGANIZATIONAL OVERVIEW	8
2.1	FORUM CORPORATE ADMINISTRATION.....	11
3	ADVANCED TECHNOLOGIES COMMITTEE (ATC) (CHAIR: BRUCE OBERLIES, MOTOROLA SOLUTIONS)	13
3.1	CHARTER AND STRUCTURE	13
3.2	FY2017 OBJECTIVES	14
3.2.1	<i>Brand the WinnForum as the Preferred Venue for the International Spectrum Sharing Community..</i>	<i>14</i>
3.2.2	<i>Identify New Market Area Relevant to the Forum’s Mission</i>	<i>15</i>
3.2.3	<i>Establish Relevant Projects</i>	<i>15</i>
3.2.4	<i>Improve Regional Support</i>	<i>15</i>
3.2.5	<i>Grow Revenue.....</i>	<i>15</i>
3.3	FY2017 PROJECT PLAN	15
3.3.1	<i>Execution on Existing Projects.....</i>	<i>16</i>
3.3.2	<i>WinnForum’s Platform Strategy</i>	<i>17</i>
3.3.3	<i>Advanced Technology Committee Roadmap</i>	<i>18</i>
3.3.4	<i>The Forum’s Top 10 Most Wanted Wireless Innovation List.....</i>	<i>18</i>
3.3.5	<i>Advocacy Agenda.....</i>	<i>19</i>
4	COORDINATING COMMITTEE ON INTERNATIONAL SCA STANDARDS (CC SCA) (CHAIRS: KEN DINGMAN, HARRIS CORPORATION AND ERIC NICOLLET, THALES)	21
4.1	CHARTER AND STRUCTURE	21
4.2	FY2017 OBJECTIVES	22
4.2.1	<i>Promote SCA Standards and Technology World-wide</i>	<i>23</i>
4.2.2	<i>Drive worldwide convergence to a common SCA standard</i>	<i>23</i>
4.2.3	<i>Develop and Leverage End-User Community Partnerships.....</i>	<i>24</i>
4.2.4	<i>Contribute towards Coalition Interoperability Solutions</i>	<i>24</i>
4.2.5	<i>Test and Certification.....</i>	<i>24</i>
4.3	FY2017 PROJECT PLANS	25
4.3.1	<i>Projects</i>	<i>25</i>
5	SPECTRUM SHARING COMMITTEE (CHAIRS: PRESTON MARSHALL, GOOGLE AND IYAD TARAZI, FEDERATED WIRELESS).....	28
5.1	CHARTER AND STRUCTURE	28
5.2	FY2017 OBJECTIVES	30
5.2.1	<i>Establish Standards for 3.55 GHz Band Spectrum Sharing</i>	<i>30</i>
5.2.2	<i>Promote Standards Adoption.....</i>	<i>30</i>
5.2.3	<i>Operationalize the 3.55 GHz Ecosystem</i>	<i>30</i>
5.2.4	<i>Grow Membership and Revenue.....</i>	<i>31</i>
5.3	FY2017 PROJECT PLANS	31
5.3.1	<i>Operational and Functional Requirements</i>	<i>33</i>
5.3.2	<i>Security Requirements</i>	<i>34</i>
5.3.3	<i>Protocol Specifications.....</i>	<i>36</i>
5.3.4	<i>Testing and Certification.....</i>	<i>37</i>
6	BOARD OF DIRECTORS FY2017 WORK PLAN	39
7	INFRASTRUCTURE AND SUPPORT SERVICES.....	41
7.1	PLATFORM STRATEGY.....	41

7.1.1	<i>Continued Product Execution</i>	42
7.1.2	<i>Marketing Strategy</i>	42
7.1.3	<i>Member Retention</i>	42
7.2	MEMBER SERVICES AND GROUP SUPPORT	43
7.2.1	<i>Project Support</i>	43
7.2.2	<i>Project Promotion and Committee Brand Management</i>	44
7.2.3	<i>Daily News Feed</i>	44
7.3	CONFERENCE MANAGEMENT AND PROMOTION	45
7.3.1	<i>WinnComm-Europe 2016</i>	45
7.3.2	<i>WinnComm 2017</i>	46
7.4	ANNUAL AWARDS	47
8	OTHER CORPORATE ADMINISTRATION	47
8.1	ANNUAL MEETING OF THE MEMBERS.....	47
8.2	CORPORATE FILINGS	47
8.3	INSURANCE	48
8.4	FY2018 PLANNING CYCLE	48

1 Introduction – The Wireless Innovation Forum FY2017 Objectives

The Wireless Innovation Forum (WInnForum) Board of Directors has established the following seven items as high level objectives for the Forum for the period from July 1, 2016 through June 30, 2017 in executing on the WInnForum’s Strategic Plan:

1. Brand the WInnForum as the Preferred Venue for the International Spectrum Sharing Community

The WInnForum will work to build on its success in forming the Spectrum Sharing Committee (SSC), and strengthen that community to ensure continued success. In addition, the WInnForum will undertake the following:

- a. Broaden focus of standards, processes and regulatory frameworks developed for Part 96 to other frequency bands than 3.55 GHz
- b. Brand the Forum as the place where licensed and unlicensed communities come together to figure out how to share spectrum. This will be tied to Part 96 in the FCC rules in the US, however the WInnForum will also look for opportunities to expand internationally in this area.
- c. Expand the role of the Forum to address enhancements to LTE management to unique aspects of operation in shared spectrum and in unlicensed/unprotected operations.

In executing on this goal, it is understood that a revision of the strategic plan may be required, and so the Board of Directors shall evaluate this early in the new fiscal year.

2. Identify New Market Area Relevant to the Forum’s Mission

The WInnForum’s Advanced Technology Committee (ATC) will act as an incubator for exploring potential new markets relevant to the Forum’s mission. In FY2017, the ATC will execute on the “platform strategy” defined in FY2016 which will guide the identification of new project/market areas. The ATC will work with the WInnForum’s members to select and develop at least one new market area. The committee will work on advancing and formalizing partnerships and end user community in existing and new market areas.

3. Execute on the Strategic Plan of the Coordinating Committee on International SCA Standards (CCSCA)

The WInnForum will focus on international harmonization of extensions to the SCA and associated API’s as developed within the US JTNC and programs such as ESSOR and SVFuA in Europe, tactical radio interoperability and acceptance of the SCA 4.1. Specific goals to accomplish this include:

- Strengthen its position as the international venue for SCA standards development and harmonization through the execution of projects focused on harmonizing the SCA extensions and related APIs
- Establish itself as a venue that can contribute to the international discussion on coalition operations.
- Identify and engage a new market for expansion of the usage of the SCA beyond traditional defense markets within the wireless communications domain.
- Advocacy of the SCA

Projects, relationships with key international programs and independent positioning will showcase the WInnForum as the leading organization to influence and direct the development of interoperable solutions based on the SCA, providing the incentive to attract new members.

4. Establish a Test and Certification Strategy for WInnForum Standards

It has been identified in both the CC SCA and SSC that there is a need for industry test and certification of specific standards. The WInnForum will therefore identify mechanisms to support industry in this regard, including investigating the feasibility and developing a strategy as appropriate for the WInnForum provides accreditation services targeted at either or both of these domains. The WInnForum's Commercialization Committees shall work towards these ends as follows:

- The CCSCA will build on the release of the SCA v4.1 and develop SCA 4.1 compliance criteria that can be utilized to guide the international community on the requirements for certifying an SCA 4.1 implementation.
- The Spectrum Sharing Committee will work to assure compliance and interoperability of WInnForum SSC standards and provide a common framework for supporting FCC certification of Part 96 functionality and performance

5. Establish Relevant Projects

The Forum's Advanced Technologies Committee, Coordinating Committee on International SCA Standards and Spectrum Sharing Committee will form both member driven projects addressing immediate needs and roadmap driven projects advancing supporting the Forum's Advocacy Agenda or Top 10 Most Wanted Wireless Innovations list:

- The Forum’s Coordinating Committee on International SCA Standards shall publish and maintain its own roadmap as defined in the Committee Charter¹, and initiate projects developing extensions to the SCA standards that address any gaps between the defined SCA evolution roadmap and Forum accepted SCA specification variants.
- The Forum’s Spectrum Sharing Committee shall publish and maintain its own roadmap as defined in the Committee Charter², and initiate projects supporting that charter focused on the development and advancement of spectrum sharing technologies required for interoperable systems in applicable bands of interest worldwide.
- Items on these roadmaps requiring investment in significant technical, business or regulatory innovation shall be added to a Forum wide “watch list”. This “watch list” will be periodically reviewed by the Advanced Technologies Committee Steering Group to determine if items on the list should be promoted to the Forum’s “Top 10 Most Wanted Wireless Innovations”. A project of the Advanced Technologies Committee will be to publish a revision of the “Top 10 Most Wanted Wireless Innovations” list in FY2017.
- The WinnForum’s Advanced Technologies Committee will also maintain and advance the Advocacy Agenda as required and shall coordinate activities with regulatory agencies and standards bodies to advance the Advocacy Agenda.
- WinnForum staff will undertake a project to revise the collaboration tools (file library, list server, etc.) used by its members in the submitting contributions and developing reports, recommendations and specifications.

The success of this goal will be measured by evaluating the level of member participation in each project.

6. **Improve Regional Support**

The Forum will continue to grow participation in its India Regional Committee. Towards this, advocacy for the International nature of SCA 4.x has to be carried out with Government of India and procurement agencies. Lectures by visiting Forum member representatives and Forum officers/volunteers will be arranged. Participation by regional committee members in work groups of Forum will be encouraged and advertised. Training /workshop to popularize SCA 4.x and establishment of Testing and validation centres for SCA will be required.

In addition, the Forum will leverage lessons learned in establishing the India Regional Committee to explore strategies for forming additional Committees in the Asia Pacific region (China, Japan, Korea, Singapore, etc.).

¹

<https://sdf.memberclicks.net/assets/documents/cc%20sca%20charter%20v3%200%20-%202023%20october%202012.pdf>

² <http://groups.winnforum.org/d/do/7958>

7. Grow Revenue

Membership growth and active participation of member companies in Forum activities is a key goal. Successful execution in this goal will result in higher membership numbers year to year from FY2016 to FY2017. In addition, the Forum will define and pursue new opportunities for non-dues revenue.

This document presents specific plans for achieving these high level objectives in separate sections dedicated to the FY2017 Meeting Plan, and the respective work plans of the Advanced Technologies Committee, the Coordinating Committee on International SCA Standards, the Spectrum Sharing Committee, the Board of Directors, and the Forum's Corporate Administration. The budget necessary to support these objectives is also addressed in the last section of this document.

2 Wireless Innovation Forum Organizational Overview

The FY2017 Organizational Structure of the Wireless Innovation Forum is presented in Figure 1. The Forum is organized around three standing committees, whose responsibilities are summarized as follows:

- The role of the Advanced Technologies Committee (ATC) is to advocate for the innovative utilization of spectrum, and advancing radio technologies that support essential or critical communications:
 - Works with wireless end users and their representatives, including network operators, government acquisition authorities and research sponsors to validate concepts and requirements against technology readiness, to document domain specific requirements, use cases and business models.
 - Supports member organizations in identifying new opportunities for next generation products and services in each defined market domain.
 - Works with the regulatory and public policy community to establish a global regulatory framework promoting the adoption of emerging technologies for advanced wireless systems.
 - Provides a venue for the exchange of information on emerging radio technologies important in wireless networking and produces reports, specifications and recommendations supporting the development and deployment of advanced wireless system and next generation radio devices

Management and oversight of this committee is provided by a Steering Group working in collaboration with a [Regulatory Advisory Committee](#). The Steering Group is comprised of the [Forum's Officers](#), and is responsible for drafting the Forum's "Top 10 Most Wanted Wireless Innovations" list and setting the Forum's "Advocacy Agenda" based on member input. These documents will be distributed to the members of the Forum for ballot following the Forum's standard process.

- The Coordinating Committee on International SCA Standards (CCSCA): supports the harmonization of SCA based standards at the international level for the mutual benefits of all stakeholders to include:
 - Defining an industry driven SCA evolution roadmap for the international community
 - Profiling the SCA specification and related APIs to define internationally accepted variants that are hosted by the Forum
 - Developing extensions to the SCA standards that address any gaps between the defined SCA evolution roadmap and Forum accepted SCA specification variants

- Providing implementation and certification guides, tools etc. easing implementation and supporting proliferation
- Establishing and managing industry led certification programs where appropriate

Management and oversight of this committee is provided by a Steering Group working in collaboration with an [Advisory Council](#).

- The role of the Spectrum Sharing Committee (SSC) is to serve as a common industry and government standards body to support the development and advancement of spectrum sharing technologies based on the three-tier architecture proposed for the 3.55 GHz rulemaking activities. While the 3.55 GHz band is the main focus on the initial activities, the Wireless Innovation Forum aims to advance this technology for all applicable spectrum bands that can benefit from it.

This Committee is intended to facilitate the interpretation and implementation of FCC rulemaking to a level that allows industry and government parties to collaborate on implementation of a common, efficient, well functioning ecosystem around this technology.

The main activities that will be conducted in the committee include:

- Detailing common industry and government functionality and architecture for Spectrum Access Systems (SAS), sensors, and devices
- Interoperability requirements and protocol definition to allow for open competitive and well-functioning systems
- Common framework for testing and integration of components of spectrum sharing technologies to allow for rapid certification and deployment and predictability, thus expanding the ecosystem and increasing utility of the spectrum
- Details of requirements, processes, and methods for protection of incumbent users as required by the spectrum rules
- Operational procedures definition for the well -functioning of the system as it pertains to spectrum assignment, managements, and interoperability

This committee is also managed by a [steering group](#), and includes observers necessary for the full operations and support of the system.

In addition to these standing committees, the Forum also has an India Regional Committee whose objective is to support the needs of the members in the India region and to create significant interest in the activities of WInnF in India.

These committees are managed by the Forum’s elected officers, which include the Chair and Vice Chair of the Forum, the Chief Technology Officer, Chief Marketing Officer, Chief Regulatory Officer, the Secretary, and the Treasurer.

Organizational Structure for The Wireless Innovation Forum

10 November 2015

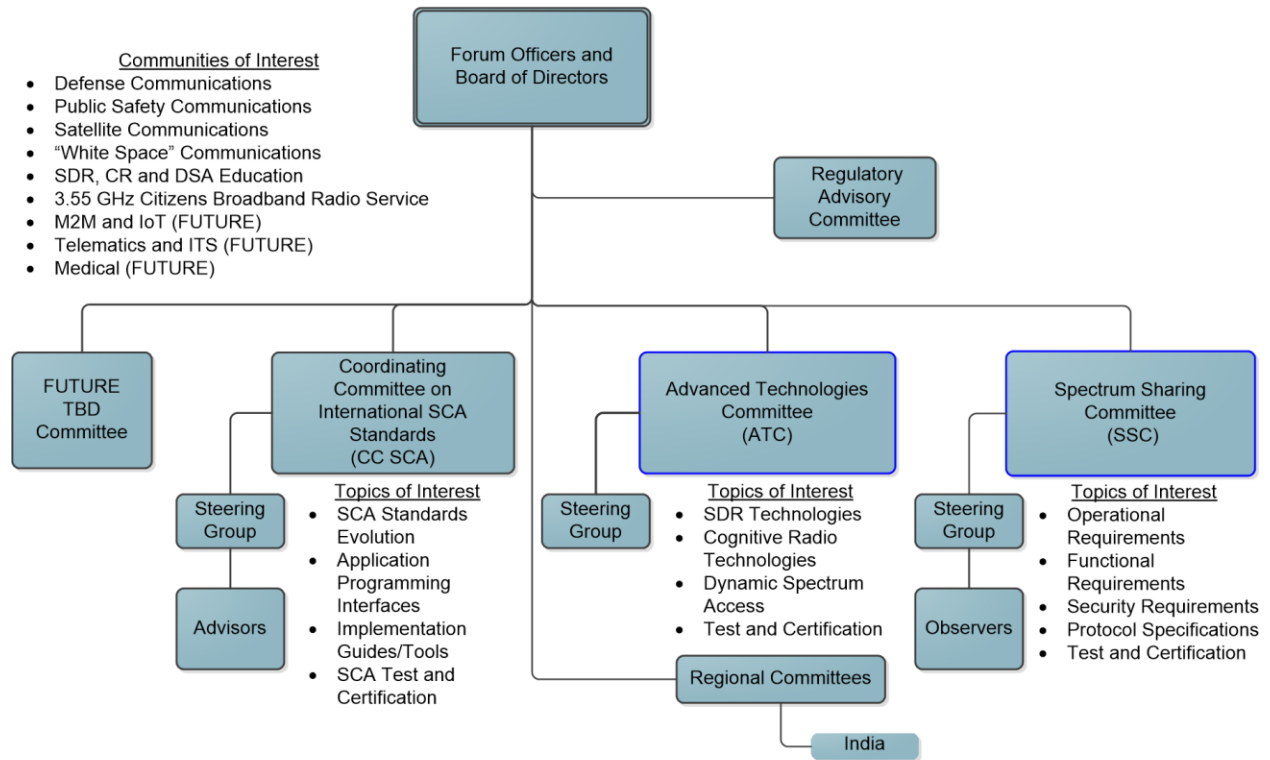


Figure 1: Wireless Innovation Forum FY2017 Organizational Structure

Management and oversight of the Forum as a whole, including the Forum’s corporate affairs, is performed by the Forum’s Board of Directors. These directors are elected on an annual basis, as defined in the [Bylaws](#). The elected slate of Directors for CY2016 is provided in Table 1.

Name	Member Organization	Position
Manuel Uhm	Ettus Research	Chair of the Board of Directors
David Hagood	Cobham	Director, Large Company Representative
Alberto Quintana	Indra	Director, Medium Company Representative
Darcy Swain-Walsh	MITRE	Director, Government and Non-profit Representative

Linda Doyle	CONTACT	Director, Academic Institutions Representative
Claudio Armani	Selex ES Communications	Director, At Large Director
Al Jette	Nokia Networks	Director, At Large Director
Doug Knisely	Qualcomm	Director, At Large Director
Iyad Tarazi	Federated Wireless	Director, At Large Director
Neeti Tandon	AT&T	Director, At Large Director
Bruce Oberlies	Motorola Solutions	Officer and Director, President and Chair of the Forum, Secretary
R. Muralidharan	Tata Power SED	Officer and Director, Vice President and Vice Chair of the Forum
Ken Dingman	Harris Corporation	Officer and Director, Treasurer and Chief Financial Officer
Marc Adrat	Fraunhofer Institut FKIE	Officer and Director, Secretary
Claude Belisle	NordiaSoft	Officer and Director, Chief Technology Officer
David Renaudeau	Thales Communications	Officer and Director, Chief Marketing Officer
Preston Marshall	Google	Officer and Director, Chief Regulatory Officer,

Table 1: CY2016 Board of Directors of The Software Defined Radio Forum Inc. The position of Small Company Representative is currently vacant.

2.1 Forum Corporate Administration

Corporate administration and member services are provided to the Forum through a combination of employees, consultants, and third party contractors. The Forum's key personnel for FY2017 are as follows:

- Chief Executive Officer ([Lee Pucker](#)) – Reporting to the Board of Directors, the Chief Executive Officer's primary responsibility is to maximize the value the Forum brings to its members. Accordingly, the CEO drives the development of the Forum's Strategic Plan and supports the Forum's other officers in executing on that plan. The CEO proactively identifies opportunities, solves the Forum's critical problems, and makes an effort to anticipate future needs of the membership. The CEO assures that the organization and its mission, programs, products and services are consistently presented in a strong, positive image to relevant stakeholders, in particular to the Forum's membership. The CEO, with the Treasurer, oversees the

organization's finances, ensuring the Forum's member's needs are met to the maximum extent possible while maintaining financial stability as a not-for-profit organization.

- Director of Marketing and Communications ([Stephanie Hamill](#)). The Director of Marketing and Communications (MarCom) has primary responsibility for managing communications for the Forum, including internet presence and member communications, and supporting the CEO in establishing and maintaining the Forum's leadership in advanced wireless markets, evangelizing the Forum's programs and services, and supporting the organizational objectives of the Forum's membership. Reporting to the Forum's CEO, the Director of MarCom helps assure that the Forum and its mission, programs, products and services are consistently presented in a strong, positive image to relevant stakeholders, in particular to the Forum's membership.

The slate of key consultants and contractors retained by the Forum to support its members in FY2017 are as follows:

- 1) [Drohan Management Group](#) – Manager of the Forum's Headquarters Operations
- 2) [InfoEx World Services](#) – Representative for the Forum in China
- 3) [Bowling, Franklin & Company](#) – Audits and Finance
- 4) [Gesmer Updegrove LLP](#) – General Legal Counsel
- 5) [Hogan Lovells](#) – Communications Regulatory Counsel

In addition, the Forum retains a document editor on an as needed basis to support the creation of reports, specifications and recommendations by its members. Additional details on the Corporate Administration Work Plan for FY2017 can be found in Sections 7 and 8 of this plan.

3 Advanced Technologies Committee (ATC) (Chair: Bruce Oberlies, Motorola Solutions)

The following high level goals have been assigned to this committee by the Board of Directors:

- 1) Primary Goals:
 - a. Brand the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
 - b. Identify new Market Area Relevant to the Forum's Mission

- 2) Shared Goals:
 - a. Establish Relevant Projects
 - b. Improve Regional Support
 - c. Grow Revenue

The project plans to support these goals are addressed in Sections 3.2 and 3.3 below.

3.1 Charter and Structure

The Advanced Technology Committee is led by a Steering Group comprised of the Forum's Executive Committee along with Topic Sponsors nominated to participate as non-voting members by the Forum's volunteer CMO, CRO and CTO. Sponsors are as follows:

- Public Safety Sponsor – Daniel Devasirvatham, INL
- Tactical Radio Sponsor – Alberto Quintana, Indra
- Spectrum Sharing Communications Sponsor – Preston Marshall, Google

The role of these sponsors is to advise the Steering group as subject matter experts for their area. A representative from each commercialization committee will also be invited to participate as an ex-officio non-voting member. In addition, the Steering Group may constitute a group of advisors on an ad-hoc basis to support their objectives at any given time.

The primary role of the Steering Group is to identify projects of strategic relevance to the committee membership, to prioritize and launch projects as appropriate, and to monitor those projects to ensure and support execution (see Figure 2). In addition, the Steering Group maintains the Forum's Top 10 Most Wanted Wireless Innovations list and Advocacy Agenda.

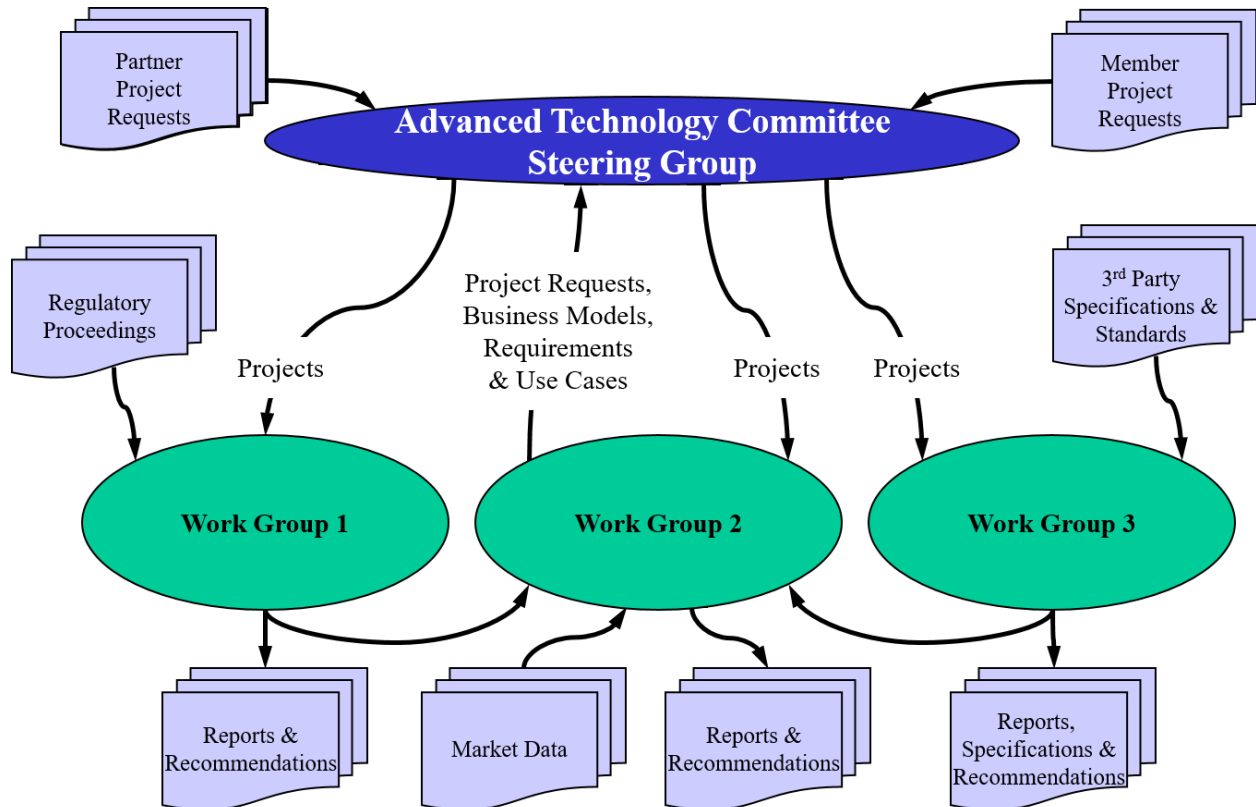


Figure 2: Advanced Technology Committee Project Approval Process

3.2 FY2017 Objectives

The Advanced Technology Committee has established the following committee objectives for FY2017 to support the Forum’s High Level Objectives:

3.2.1 Brand the WinnForum as the Preferred Venue for the International Spectrum Sharing Community

The WinnForum’s Advanced Technology Committee (ATC) will work to build on its success in forming the Spectrum Sharing Committee (SSC), and strengthen that community to ensure continued success. In addition, the WinnForum will undertake the following:

- a. Broaden focus of standards, processes and regulatory frameworks developed for Part 96 to other frequency bands than 3.55 GHz, leveraging existing liaison with ETSI Technical Committee on Reconfigurable Radio Systems (TC-RRS) as appropriate.
- b. Brand the Forum as the place where licensed and unlicensed communities come together to figure out how to share spectrum. This will be tied to Part 96 in the FCC rules in the US, however the WinnForum will also look for opportunities to expand internationally in this area.
- c. Expand the role of the Forum to address enhancements to LTE management to unique aspects of operation in shared spectrum and in unlicensed/unprotected operations.

3.2.2 Identify New Market Area Relevant to the Forum's Mission

The WInnForum's Advanced Technology Committee (ATC) will act as an incubator for exploring potential new markets relevant to the Forum's mission. In FY2017, the ATC will execute on the "platform strategy" defined in FY2016 which will guide the identification of new project/market areas. The ATC will work with the WInnForum's members to select and develop at least one new market area. The committee will work on advancing and formalizing partnerships and end user community in existing and new market areas.

3.2.3 Establish Relevant Projects

The members of the Advanced Technology Committee will deliver reports in FY2017 through work efforts defined in Section 3.3 of this plan. A project of the Advanced Technologies Committee will be to publish a revision of the "Top 10 Most Wanted Wireless Innovations" list in FY2017. The WInnForum's Advanced Technologies Committee will also maintain and advance the Advocacy Agenda as required and shall coordinate activities with regulatory agencies and standards bodies to advance the Advocacy Agenda.

3.2.4 Improve Regional Support

The Forum will continue to grow participation in its India Regional Committee.

The Advanced Technology Committee will strive to have inclusion of the Regional Committees in all work projects and initiatives. While some projects have specific Region focus there are relevant problems being addressed that could have interest in other regions. The Advanced Technology Committee will do the following to improve Regional Support:

- 1) Review active projects with India Regional Committee (and any newly formed Committees) and identify common areas of interest and develop action items (e.g. keep members informed, expand existing project scope, create new project, etc.) to address these areas of interest.
- 2) Include India Regional Committee (and any newly formed Committees) in the Advanced Technology Committee efforts to new market areas relevant to the Forum's Mission.
- 3) Support the Forum staff with Regional Committee development that aligns with work projects and initiatives in the Advanced Technology Committee.

3.2.5 Grow Revenue

Membership growth and active participation of member companies in Forum activities is a key goal. Successful execution in this goal will result in higher membership numbers year to year from FY2016 to FY2017. In addition, the Forum will define and pursue new opportunities for non-dues revenue.

3.3 FY2017 Project Plan

The Advanced Technology Committee will extract roadmap requirements from use case, business model and market study reports developed by its members for consideration in the Forum's Top 10 Most Wanted Wireless Innovations List. Additionally a roadmap of projects will be identified

supporting positions within and promotion of the advocacy agenda as required. Topic Sponsors of the Advanced Technology Committee will assist in organizing projects focused on the specific needs identified in the Roadmap, Top 10 Most Wanted Wireless Innovations List, and Advocacy Agenda.

The WinnForum’s Advanced Technologies Committee will maintain and advance the Advocacy Agenda as required and shall coordinate activities with regulatory agencies and standards bodies to respond to inquiries and proceedings to advance the Advocacy Agenda.

In support of the Forum’s Top 10 Most Wanted Wireless Innovations List and to guide the Advanced Technology Committee’s choice of projects, the Advanced Technology Committee shall convene a discussion at each face-to-face meeting for the purpose of defining and publishing an Advanced Technology Committee Roadmap and an Advanced Technology Committee Watch List.

3.3.1 Execution on Existing Projects

The ATC plans to continue work on the following projects in FY2017:

1. ***“Receiver Performance Guidelines and Evaluation Criteria”***

- **Objective:** This report is being developed for regulators, designers, manufacturers and users of wireless communications systems who are developing wireless policy and equipment to access shared spectrum or to coexist with adjacent spectrum users while understanding impact to current spectrum users. The report will produce a set of actionable guidelines to design and evaluate the performance of receivers that will coexist in shared & adjacent spectrum bands that can be used as a foundation for future radio systems.
- **Project Lead:** Bruce Mueller (Motorola Solutions)
- **Milestones:**
 - Expected Completion: July 2016
- ***Electromagnetic Spectrum Sensing Study Group (EMS3)* Objective:** This report is being created for any party wishing to develop, deploy and operate a remote spectrum sensing capability who require a standardized set of methods, practices, data formats and protocols to configure, control and receive data from one or more remote spectrum sensor devices. The “Use Cases”, “Implementation Guidelines” and, if applicable, “Data Format and Protocol” documents are publicly available resources will describe industry best practices and provide implementation resources plus guidelines to achieve technical interoperability between sensor systems and various middleware based on open standards.
- **Project Lead:** Jesse Caulfield (Key Bridge LLC)
- **Milestones:**
 - Expected Completion: ? 2017

3.3.2 WinnForum's Platform Strategy

The Advanced Technology Committee (ATC) will lead the execution of the WinnForum's Platform Strategy which was a project that was initiated by ATC in FY2016. The overall vision and goal is to attract new members to lead new project(s) incubating in ATC, leveraging the Forum's experience, international reach and proven successes. The strategy roadmap is as follows:

- Product Strategy
 - The Forum will work to optimize policies and procedures to support the defined commercialization framework, including:
 - Document Development Policy
 - IPR Policy
 - Membership Benefits Policy
 - Procedures for onboarding new members and new member representatives
 - Take board actions on Trial and Anchor membership and formalize in policy
- Technology Strategy
 - The Forum will work to optimize its collaboration tools to increase efficiency in starting new projects, remove barriers to participation and accelerate development within those projects. Elements of this include:
 - Optimizing the tools for managing files for each committee, work group and task group
 - Optimizing the tools supporting electronic collaboration (discussion forums, messaging, etc.)
 - Optimizing tools for scheduling and hosting online meetings
 - Optimizing stakeholder communications with respect to status and events
 - Optimizing tools for managing the balloting process
 - By executing on this strategy we will improve our ability to gain new members by allowing them to more easily spin up a new project, and increase retention of existing members by providing a better overall experience.
- Marketing Strategy
 - We will work to strengthen the WinnForum brand to attract and secure new project opportunities and promote existing and future work products to help build the desired ecosystem. Elements of this include:
 - Improving the external web site to better promote and make visible Forum work projects and resulting products, better promote our differentiators and facilitate easy membership sign up

- Creating new marketing materials for distribution electronically and materially to increase industry awareness and knowledge about Forum projects and products, differentiators and benefits of membership
- Creating a placement plan to increase awareness through advertising and trade show/conference presence
- Getting a new Committee requires presenting the platform to people outside the Forum who need to start new projects
- Execution is tied to working with the Board Outreach Committee and Committee Steering Groups
- By executing on this strategy we will grow awareness and knowledge of the Forum brand and build interest in membership and project initiation.

3.3.3 Advanced Technology Committee Roadmap

The Advanced Technology Committee Roadmap is a document that outlines strategic projects the ATC desires to undertake in support of the Forum's Advocacy Agenda, the Forum's Top 10 Most Wanted Wireless Innovations List, and the ATC Watch List. The list does not restrict the projects that Topic Sponsors may support but rather guides the Advanced Technology Committee to launch new projects that are aligned with the objectives of the Committee.

The Chair of the Advanced Technology Committee is responsible for the Roadmap.

3.3.4 The Forum's Top 10 Most Wanted Wireless Innovation List

The Advanced Technology Committee is responsible for the Wireless Innovation Forum Top 10 Most Wanted Wireless Innovation List.

The process that will be adopted by the Committee in FY2017 is as follows:

- Members of the Advanced Technology Committee will discuss at each Committee Meeting any prospective changes to the Watch List
- The Advanced Technology Committee will discuss in a Committee Plenary at all face-to-face meetings and update their Watch List
 - New candidates and their reason for inclusion shall be noted
 - Updates on progress for existing Top 10 List items shall be noted
 - Solved problems with references and reasons for removal shall be noted
- An Advanced Technology Committee Plenary shall be held prior to the Forum Closing Plenary at each face-to-face meeting for the purpose of voting out the Advanced Technology Committee Top 10 List changes.
- The Chief Technical Officer of the Forum is responsible for consolidating Top 10 List inputs from all Forum Committees. The procedure shall be as follows:
 - At the opening plenary the CTO shall present the current Top 10 List and remind Committees to actively discuss the list during their working sessions.

- Prior to the closing plenary the Chairs of each Committee are responsible for providing input to the CTO on any proposed changes to the Top 10 List or the Watch List.
- At the closing plenary the CTO shall lead a discussion of the consolidated proposals. If changes to the Watch List are presented by either Committee, a discussion of the merits of modifying the Forum's Top 10 List shall be conducted.
- Any changes to the Forum's Top 10 List shall be balloted at the subsequent face-to-face meeting.
- In addition the CTO shall maintain a consolidated Forum "Watch List that is the union of the Committee watch lists

This Watch List and the Top 10 List shall be available to the public on the Forum's website allowing for comments

- Any public requests for new entries to the watch list shall be reviewed by the CTO and sent to the appropriate Committee for consideration in the committee level watch list

The Chair of the Advanced Technology Committee is responsible for the Committee's Top 10 Most Wanted List and the Watch List.

The CTO of the Forum is responsible for the consolidated Top 10 Most Wanted List and the consolidated Watch List.

3.3.5 Advocacy Agenda

The Advanced Technology Committee of the Forum is responsible for the Advocacy Agenda and maintaining a consolidated list of proposed changes/additions to the Advocacy Agenda.

The process that will be adopted for updating the Advocacy Agenda in FY2017 is as follows:

- An Advocacy Committee shall be established. The officers of the Forum and the Chair of the Board shall be part of this committee.
- The committee shall meet quarterly or as needed to discuss changes to the Advocacy Agenda. Such meetings may be held in conjunction with the Advanced Technology Committee Steering Group Meetings.
- The Chief Regulatory Officer is responsible for consolidating all Advocacy Agenda inputs from all Forum Committees. The procedure shall be as follows:
 - At the opening plenary the CRO shall present the Advocacy Agenda and remind Committees to actively discuss the Agenda during their working sessions.
 - At each face-face Committee Plenary, members of the Forum shall discuss any prospective changes or additions to the Advocacy Agenda.
 - New Advocacy Agenda topics

- Additions to existing Advocacy Agenda topics
 - Clarifications to existing Advocacy points
- Prior to the closing plenary the Chairs of each Committee are responsible for providing input to the CRO on any proposed changes to the Advocacy Agenda.
- At the closing plenary the CRO shall lead a discussion of the consolidated proposals. If changes to the Advocacy Agenda are presented by either Committee, a discussion of the merits of modifying the Advocacy Agenda shall be conducted.
- Any changes to the Advocacy Agenda shall be balloted at the subsequent face-to-face meeting.
- In addition the CRO shall maintain a consolidated Forum Advocacy Agenda proposed changes list based on inputs from all Forum committees.

The Advocacy Agenda shall be available to the public on the Forum's website allowing for comments

- Any public comments shall be reviewed by the CRO and sent to the appropriate Committee for consideration in the committee level Advocacy Agenda proposed changes list.

The proposed changes list shall only be available to Forum members on the Forum's website.

4 Coordinating Committee on International SCA Standards (CC SCA) (Chairs: Ken Dingman, Harris Corporation and Eric Nicollet, Thales)

The following high level goals have been assigned to the committee from the Board of Directors:

- 1) Primary Goals:
 - a. Execute on the Strategic Plan of the Coordinating Committee on International SCA Standards
 - b. Establish a Test and Certification Strategy for WInnForum Standards
- 2) Shared Goals:
 - a. Establish Relevant Projects
 - b. Improve Regional Support
 - c. Grow Revenue

4.1 Charter and Structure

The current mission of the Coordinating Committee on International SCA Standards (CC SCA) is to “support international harmonization of the SCA through open standards with unlimited public access, while influencing the specification and development and verification of portable SCA based waveforms”.

The CC SCA is comprised of 3 major organizational elements. A Steering Group (SG) that is responsible for coordinating the different activities within the CC SCA and ensuring that liaisons with the stakeholders and the Forum’s Board of Directors are maintained. An Advisory Council that acts as an advisory body to the SG, representing various Government stakeholders in the identification of requirements and development of visions to support their operations. A set of Working Groups that focus on identifying needs/issues and providing solutions, executing approved projects. For FY2017, there six active Working Groups, with activities in the SCA API Work Group and International Radio Security Services Working Group suspended:

- Advocacy Working Group
- SCA Evolution Working Group
- SCA Implementer’s Working Group
- SCA Test & Evaluation Working Group
- Transceiver Working Group
- International Tactical Radio Special Interest Group

The structure of the CC SCA organization is provided in Figure 2 below in conjunction with the relationship of the CC SCA to other WINNF organizational elements. Steering Group Members include:

- A4ESSOR
- Harris Corporation
- Hitachi Kokusai Electric
- Indra Sistemas
- Raytheon
- Rockwell Collins
- Rohde & Schwarz
- Selex ES
- Thales

Structure for Coordinating Committee on International SCA Standards

15 Jun 2015

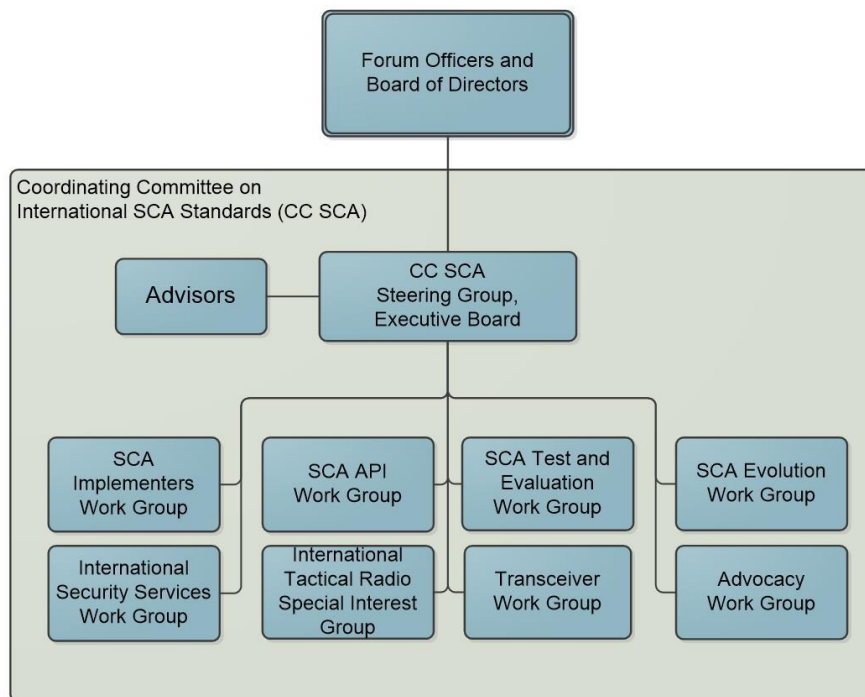


Figure 3: Coordinating Committee on International SCA Standards Organizational Structure

4.2 FY2017 Objectives

The CC SCA has established the following committee objectives for FY2017 to support the needs of the members and participants of the CC SCA in conjunction with the WINNF's "High Level Objectives".

4.2.1 Promote SCA Standards and Technology World-wide

This objective relates to the Outreach foundational element of the Strategic Plan and maps to the “Grow Revenue” goal assigned by the Board of Directors.

The CC SCA Steering Group will develop and execute a marketing campaign for the promotion and promulgation of SCA standards and technology solutions within world-wide defense markets and penetrating into other relevant SDR domains. The CC SCA will develop and broadly distribute SCA related marketing collateral in conjunction with sponsorship of technical workshops and webinars as methods to promote the values and benefits of SCA Standards technology and solutions. The purpose of this activity is to facilitate the growth of commercial investment in the SCA Standards eco-system providing cost and time-to-market benefits to all stakeholders in the SCA community. This activity is also intended to enable expansion of regional support for SCA Standards across the globe, provide strength for the WINNF brand, while expanding membership and participation with the CC SCA and the WINNF in general.

In FY2017, the Working Group will perform activities which may include:

- a. Identify strategic domains / markets where the use of the SCA is most applicable and where adoption would be easiest in the short term (early successes),
- b. Develop an outreach campaign to promote the SCA in those domains (magazine papers, conferences presentations),
- c. Organize a WinnForum sponsored workshop on open architectures for embedded systems,
- d. Create a technical Working Group focused on the use of SCA in a new market.

4.2.2 Drive worldwide convergence to a common SCA standard

This objective relates to the Standards Harmonization foundational element of the Strategic Plan and maps to the “Execute on the Strategic Plan of the CCSCA” goal assigned by the Board of Directors.

The CC SCA Steering Group will develop plans for drive convergence to a common SCA and related API's. Leveraging the Advisors, the CC SCA Steering Group will solicit existing SCA based programs to determine content they will be willing to share towards developing a singular SCA and SDR API set of standards definitions. Based on these inputs, a roadmap of standards updates that could be developed to guide continued SCA based standards and associated eco-system evolution through technology development and insertion. Roadmap solutions associated with defined needs will be expressed through a representative combination of suitable elements, which can include:

- Business cases and operating models

- Policies, guidelines, best practices and lessons learned
- Identification and establishment of supporting infrastructure (i.e., process, procedures, tools)
- Specifications, Standards (i.e., APIs) and Technical Reports
- Prototypes (proof of concept implementations)
- Services (i.e., Certification support)

These roadmaps will be utilized to define, prioritize and establish relevant CC SCA projects. Elements of these roadmaps that require significant technical, business or regulatory innovation will be submitted to the Forum's Roadmap Committee for inclusion in the Forum's "Top 10 Most Wanted Wireless Innovations" report as defined in Section 3.3.4 of this Operations Plan.

4.2.3 Develop and Leverage End-User Community Partnerships

The CC SCA Steering Group will develop and leverage End-User community partnerships as a foundational element to coordinate and harmonize SCA Standards for the benefit of all stakeholders. This will be accomplished by building on the Advisory Council (AC) model through the following:

1. Continued facilitation of information exchange with AC members.
2. Continuation of formal relationships, such as contracts, research and development agreements and memorandums of understanding where appropriate.
3. Strategic expansion of AC membership. Leveraging lessons learned in establishing the India Regional Committee, the CC SCA will explore strategies for forming additional Committees in other regions (China, Japan, Korea, Singapore, etc.).

4.2.4 Contribute towards Coalition Interoperability Solutions

This objective relates to the "Execute on the Strategic Plan of the CCSCA" and may contribute to "Grow Regional Support" goals provided by the Board of Directors.

The CC SCA will establish itself as a venue that can contribute to the international discussion on coalition operations. The CCSCA will identify how standardization of technical solutions can be provided to support improved coalition operations. The CCSCA will establish relationships with existing organizations (such as NATO) and countries not participating in formal coalition alliances in order to identify and provide solutions that complement activities currently underway.

4.2.5 Test and Certification

This objective maps to the "Establish a Test and Certification Strategy for WInnForum Standards" goal assigned by the Board of Directors.

The CC SCA strategy is to analyze the needs from programs, program offices and other development activities occurring in the WInnForum and worldwide in FY2017 to determine the feasibility of value added evaluation and/or certification services that the WInnForum can provide. Appropriate initiatives and projects will be developed as these opportunities are realized. As an example the WInnForum SCA 4.1 Compliancy project may provide a foundation for follow on test and certification project(s) or services. The CC SCA should also endeavor to determine the feasibility of the WInnForum being an accreditation or certification body for the SCA.

4.3 FY2017 Project Plans

The CC SCA plans to deliver multiple work products through a series of projects in FY2017. Specific work products and milestones delivered from existing and planned projects are presented below.

The primary areas of focus for project execution will be

- SCA 4.1 Adoption (through Certification support and Advocacy)
- SCA and API Harmonization
- Coalition Interoperability

The following projects will be executed in FY2017 in support of this

4.3.1 Projects

The CC SCA plans to execute the following projects in FY2017 (see above for work product descriptions).

1. "SCA Harmonization Roadmap"

- **Objective:** The Roadmap project will identify areas of discrepancy between implementations and develop a prioritized list of APIs and segments of the SCA where harmonization is required. Based on this it will create a roadmap to drive convergence on a common set of SCA based standards.
To address the lack of progress on the Roadmap in previous year, the effort will be run as a Project, with a defined plan, committed participation and reporting to the BoD.
- **Work Group:** CC SCA
- **Project Lead:** Ken Dingman, Harris/Eric Nicollet, Thales
- **Milestones:**
 - i. Approved Project Plan: January 2017

2. "Timing Services API Harmonization"

- **Objective:** The **SCA Evolution Work Group** will drive the continued evolution of SCA Standards through the technical analysis, evaluation and recommendation of corrections, extensions and improvements, delivering formal recommendations and updated standards to the JTNC Standards Organization for consideration of incorporation into future versions of the specifications. Upon completion of the Transceiver Facility API, a Timing Services API Harmonization project will begin with inputs contributed from the JTNC (published Timing Service API), ESSOR and industry.
- **Work Group:** SCA Evolution
- **Project Lead:** TBD
- **Milestones:**
 - Approved Project Plan: November 2016

3. *“SCA 4.1 Advocacy”*

- **Objective:** The SCA Advocacy Work Group will continue in the development of material, coordination, holding and participating in workshops and conferences, etc. to promote the SCA and in particular SCA v4.1. The developed material will provide information supporting the adoption and implementation of SCA v4.1
- **Work Group:** SCA Advocacy
- **Project Lead:** David Renaudeau, Thales
- **Milestones:**
 - European Conference Workshop: October 2016
 - US Conference Workshop: March 2017

4. *“SCA Usage Expansion”*

- **Objective:** The SCA Advocacy Work Group will be formed to evaluate and analyze opportunities for expanding the usage of the SCA beyond the tactical radio market.
- **Work Group:** SCA Advocacy, “SCA Expansion” Subgroup
- **Project Lead:** Claude Belisle, NordiaSoft
- **Milestones:**
 - Approved Revised Project Plan: October 2016

5. *“Transceiver Facility API”*

- **Objective:** Complete the Transceiver API v2.0 specification that was started in FY2015
- **Work Group:** Transceiver API WG
- **Project Lead:** Claude Belisle, Nordia Soft
- **Milestones:**
 - Project Completion: Sep 2016

6. *“SCA 4.1 Compliancy”*

- **Objective:** Develop SCA 4.1 requirements allocation, compliance criteria for each requirement.
- **Work Group:** Test and Evaluation WG
- **Project Lead:** JTNC Designated Representative (Eric Christensen, Contactor, SPAWAR)
- **Milestones:**
 - 2 Months After Kick-Off (MAKO) – Requirements allocated (WF, OE, Both) and prioritized (High, Medium, Low)
 - 5 MAKO – High priority requirements compliance criteria and verification method identified
 - 8 MAKO – Medium priority requirements compliance criteria and verification method identified
 - 11 MAKO – Low priority requirements compliance criteria and verification method identified

7. *“Coalition Interoperability”*

- **Objective:** Develop report that will focus on emerging tactical coalition communications demands driven by the need for improved coordination between deployed units of forces from different nations and agencies, including shared situational awareness (i.e., Blue Force Tracking), exchanging secure voice, data and multimedia information.
- **Work Group:** International Tactical Radio Special Interest Group
- **Project Lead:** David Renaudeau
- **Milestones:**
 - Approved Project Plan: April 2016
 - Finalize ontology and Use Case details: June 2016
 - Finalize Document for review & approval: December 2016
 - Project Complete: March 2017

5 Spectrum Sharing Committee (Chairs: Preston Marshall, Google and Iyad Tarazi, *Federated Wireless*)

The following high-level goals have been assigned to the committee from the Board of Directors:

- 1) Primary Goals:
 - a. Brand the Forum as the preferred venue for the spectrum sharing community
 - b. Establish a test and certification strategy for WInnForum Standards
- 2) Shared Goals:
 - a. Establish relevant projects
 - b. Formalize partnership relationships with end user communities
 - c. Improve regional support
 - d. Grow revenue

The project plans to support these goals are addressed in section 5.2 and 5.3 below.

5.1 Charter and Structure

The Spectrum Sharing Committee (SSC) supports the development and advancement of spectrum sharing technologies based on the three-tier architecture proposed for the 3.55 GHz rulemaking activities. While the initial focus is on the 3.55 GHz Citizens Broadband Radio Service (CBRS), the Committee aims to advance this technology for all applicable spectrum bands that can benefit from it.

The charter for the Committee is to facilitate the interpretation and implementation of FCC rulemaking to a level that allows industry and government parties to collaborate on implementation of a common, efficient, well-functioning ecosystem around this technology. The primary activities of the Committee include:

- Detailing common industry and government functionality and architecture for Spectrum Access Systems (SAS), Environmental Sensing Capability (ESC), and CBRS devices
- Defining interoperability requirements and protocols to allow for open, competitive, and well-functioning systems
- Developing a common framework for testing and integration of components of spectrum sharing technologies to allow for rapid certification, deployment, and predictability, thereby expanding the ecosystem and increasing utility of the spectrum

- Establishing requirements, processes, and methods for protection of incumbent users as required by the spectrum rules
- Setting operational procedures definition for the well -functioning of the system as it pertains to spectrum assignment, managements, and interoperability

The approach to work activities by the Committee emphasizes system interoperability while achieving simplicity in interfaces and requirements. This is done to advance competitive and innovative approaches and to increase deployment speed of these systems.

The Committee is led by a Steering Group responsible for managing the overall activity flow and ensuring consensus and agreement with results from the discussions, such that progress can be made properly and timely to serve the interest of all the stakeholders. Membership of the Steering Group is comprised of the following:

- Committed SAS developers and operators (engaged in the development of the system and intend on participating in this market)
- Committed Sensor and/or Device developers and wireless equipment suppliers (engaged in the development of the system and intend on participating in this market)
- Committed users and service operators (engaged in the development of the system and intend on participating in this market)

Steering Group member companies include:

- Airspan
- AT&T
- Comsearch
- CTIA
- Ericsson
- Federated Wireless
- Google
- Huawei
- Keybridge Global
- Motorola Solutions
- Nokia
- Pathfinder Wireless
- Qualcomm
- Ruckus Wireless
- Sony
- T-Mobile
- Verizon

The Steering Group identifies projects of strategic relevance to the membership; assigns, prioritizes, and launches new projects within subcommittee Working Groups; sets desired outcomes and monitors projects within the Working Groups to ensure their support and timely execution; and approves Working Group recommendations.

Further, the Steering Group ensures that activities are not directed at policy-making or liability management. While the Committee may, from time to time, make formal technical recommendations to the FCC or other regulatory bodies, following the Forum's standard policies and procedures, it is nonetheless a standards and technical implementation forum.

5.2 FY2017 Objectives

The Spectrum Sharing Committee has established the following objectives for FY2017 to support the high-level objectives assigned to the Committee by the Board of Directors:

- Establish standards for 3.55 GHz band spectrum sharing
- Promote adoption of WInnForum standards
- Operationalize the 3.55 GHz Ecosystem
- Grow revenue

5.2.1 Establish Standards for 3.55 GHz Band Spectrum Sharing

Building on success from FY2016, the Steering Committee has again established an aggressive project plan for FY2017 leading to comprehensive standards for 3.55 GHz Band spectrum sharing. The project plan, as detailed in Section 5.3, is divided into four Working Group areas: Operational and Functional Requirements, Security Requirements, Protocol Specifications, and Testing and Certification. To accelerate consensus building and satisfy the aggressive project schedule, the Working Groups establish Task Groups to generate interim work product that is approved and incorporated into Working Group deliverables. Collectively, the four Working Groups will publish 7 Technical Specification deliverables in FY2017.

5.2.2 Promote Standards Adoption

Adoption of standards approved and published by the Committee is vital to expanding the Forum's leadership and brand in the spectrum sharing community. In FY2017, the Committee will establish an Outreach Working Group to work with the Forum's Executive Committee and Forum Staff to further Committee activities including exploring development of a spectrum sharing technology brand as well as to market Committee standards publications.

5.2.3 Operationalize the 3.55 GHz Ecosystem

In FY2017 the Committee's primary focus was developing the essential requirements and standards necessary to realize the FCC's 3.55 GHz band rules and to establish a functioning shared spectrum ecosystem. With the initial requirements and standards nearly in place, the Committee

will begin to turn its attention to operationalizing the ecosystem. In FY2017, the Committee will explore establishing a new Working Group aimed at advancing common operational needs for a vibrant 3.55 GHz system. Operational needs this Working Group will address include:

- Support for the FCC’s Certification Test of SAS, ESC, and CBSDs elements.
- Certification Authority (CA) Administration. Including developing performance requirements for the CA, the CA approval process, and issuing an RFI for the CA approval.
- Partnering with other organizations to implement a Training and Certification process for CBSD Professional Installers.
- Other ecosystem needs, such as the development and administration of common databases for Grandfathered Wireless Broadband Licensee system records, Category B CBSD installation records, etc.

5.2.4 Grow Membership and Revenue

The Committee has grown significantly over FY2016 and now enjoys participation from over 200 individuals representing more than 50 organizations. Membership growth and continued active participation of member companies in the Committee is a key objective.

Committed industry participation in the Committee in FY2017 will be evidence that the Committee is executing on its goal to brand itself as the preferred venue for the spectrum sharing community. In FY2017 the Committee will continue to focus on strengthening the Forum’s brand overall, which in turn will result in increased membership, increased participation in Forum events, and ultimately grow revenue.

5.3 FY2017 Project Plans

As described above, the Steering Committee has established an aggressive project plan for FY2017, which will lead to standards for the operation, test, and certification of 3.55 GHz CBRS band ecosystem elements in accordance with FCC rules and regulations. The FY2017 project plan is allocated among four Working Groups: Operational and Functional Requirements, Security Requirements, Protocol Specifications, and Testing and Certification.

Committee standards are being developed in phases. This approach allows the work of the Committee proceed while adapting to changes in FCC regulations for the 3.55 GHz CBRS band and to the requirements of the prospective suppliers and users of the band as their business models evolve. The current phasing established by the Committee is as follows:

Early Release

SAS to SAS and SAS to CBSD Protocols

Version 1.0.0

FCC R&O, GAA Category A, Domain Proxy support for managed networks, limited support for PAL and Certified Professional Installer

Version 2.0.0

FCC 2nd R&O, Initial support for PAL and Category B, Full GAA, Measurement Reporting and Inter-SAS Communications

The Early Release was the focus of FY2015 and early FY2016. Work on Version 1 commenced in mid FY2016 and will continue into early FY2017. Version 2 will be primarily addressed in FY2017. The Committee will add other standards development phases, as required.

The publication timelines for the Committee’s standards development phases are depicted in Figure 4, Figure 5 and Figure 6 below. Further details regarding the objectives, FY2017 goals, and FY2017 deliverables for the four SSC Working Groups are detailed in the subsequent sections.

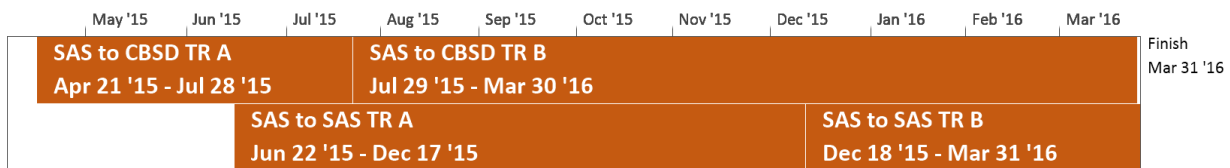


Figure 4: SSC Early Release Standards Publication Timeline

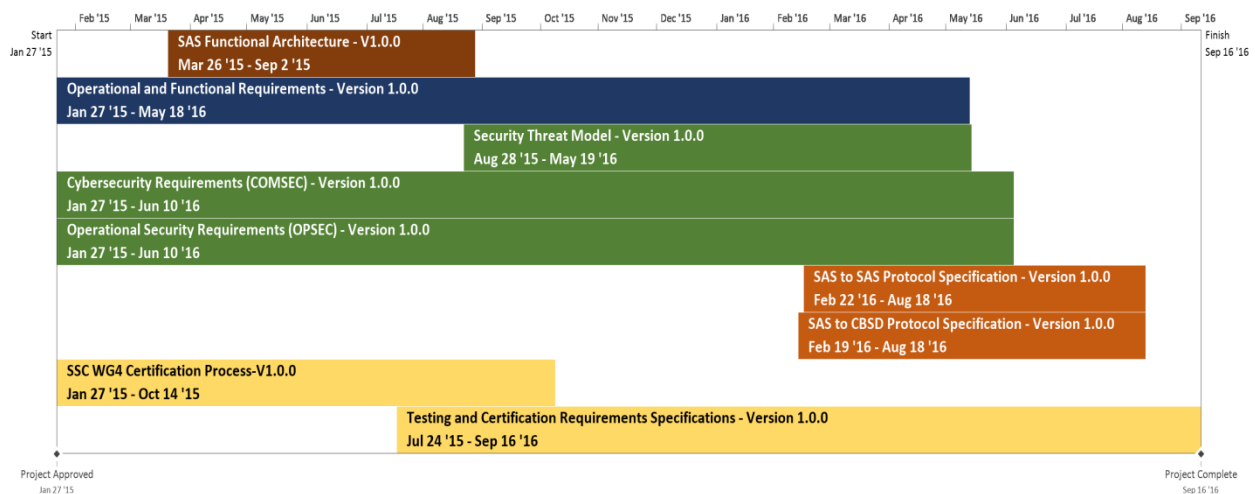


Figure 5: SSC Version 1 Standards Publication Timeline.

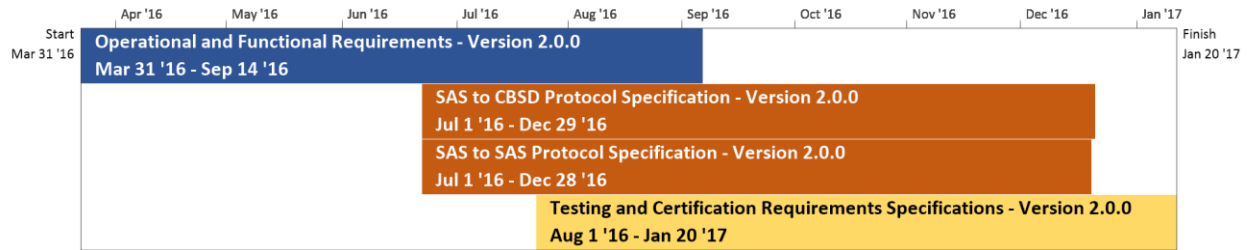


Figure 6: SSC Version 2 Standards Publication Timeline.

5.3.1 Operational and Functional Requirements

The objective of this Working Group is to work on further defining Spectrum Access Systems (SAS) functional requirements as they relate to creating an interoperable system across the various providers of systems and equipment within the industry. There is no intent in this Working Group to define a common architecture and design for SAS systems. This Working Group will further track and articulate common functional questions that require industry consensus for further clarification and definition.

FY2017 Goal

WG1’s FY2017 goal is to continue to develop the standards and requirements that will allow the 3.55 GHz SAS community to translate the FCC rules into implementable and interoperable functions, building upon current work product.

The Group developed and approved the Operational and Functional Requirements Version 1 deliverable in FY2016. The deliverable addressed Operational and Functional Requirements for:

- The FCC First Report and Order
- The baseline requirements of the CBRS Domain Proxy for initial testing and trials.
- The requirements for implementation of an Environment Sensing Capability, and protecting federal incumbents.
- The requirements for how a CBSD registers with a SAS, including owner registration, professional installer registration and CBSD registration.
- The requirements for how trouble tickets or exceptions are managed, including from FCC input, reports from incumbents, and reports from PAL.

FY2017 Standards Deliverables

The Group will deliver the Operational and Functional Requirements Version 2.0.0 specification in FY2017. This deliverable will address:

- Fixed Satellite Service Protections
- Grandfathered 3650 Protection
- Change requests from Version 1
- Rule changes resulting from the FCC's Second Report and Order on CBRS
- Requirements on how Priority Access License reports their coverage area to the SAS for end-to-end use of the licenses, including how PAL licensees request to operate in a particular geographic area within their license boundary; how credentials are defined, conveyed and managed; and how the SAS accomplishes such protections.
- Requirements for CBSD measurements of their local interference environment, and reporting those data back to the SAS.
- Requirements for information sharing and protection among SASs.
- Guidelines for adoption of uniform industry working standards and curriculum required to be consistent with the protection of spectrum, both licensed and GAA, for sharing in the 3550-3700 MHz band.

Delivery Plan

The Operational and Functional Requirements Version 2.0.0 deliverable is targeted for mid-September 2016.

Group member activity and participation are high and the group regularly receives contributions of very high quality. Further, WG1 has successfully implemented the use of Task Groups to parallelize activity and accelerate the process of consensus building. In the opinion of the Group Chair and Vice Chair the stated deliverables have a high likelihood of successful completion by the scheduled date.

5.3.2 Security Requirements

The Security Requirements Working Group is responsible for defining the cybersecurity and operational security (OPSEC) requirements for the SAS ecosystem. Cybersecurity requirements focus on ensuring that SAS transactions are trusted and principally on the cryptographic protocol and key management requirements to secure the overall system. OPSEC requirements will focus on protection of sensitive incumbent information from edge-network probing and ensuring that the system has features, which enable appropriate auditing and governance of commercial activities in federal bands.

FY2017 Goal

WG2's charter is to define the security requirements for the overall SAS ecosystem, to include cybersecurity protections and operational security protections to protect incumbent privacy. The Group has developed several deliverables related to Version 1.0.0, which have been either approved by the Group or are nearing approval. These deliverables address:

- Security requirements in the FCC First Report and Order
- Security aspects related to the implementation of an Environment Sensing Capability, and protecting federal incumbents.
- Communications security policies governing SAS and CBSD communications interfaces.
- Operational security requirements including the handling of incumbent data, obfuscation of spectrum data, and processes associated with auditing and governance of the SAS infrastructure.
- Threat model document that enumerates the security threats to the CBRS system

WG2's FY2017 goal is to finalize the security requirements for the CBRS system.

Standards Deliverables

WG2 has not currently defined specific Version 2 deliverables. Some work related to the ComSec, OpSec, and Threat Model deliverables defined as part of Version 1 are expected to continue into 1H'FY2107. In addition, the Work Group will be involved in setting the performance requirements and approval process for the Certificate Authority. The group will further, on as needed basis, address the following:

- Change requests from Version 1
- Rule changes resulting from the FCC's Second Report and Order on CBRS.
- Security aspects related to the implementation of an Environment Sensing Capability, and protecting federal incumbents.

Delivery Plan

Group member activity and participation are high and the group regularly receives contributions of very high quality. In the opinion of the Group Chair the stated deliverables for Version 1.0 have a high likelihood of successful completion in 1H'FY2017 and the group remains well positioned to conduct additional work as needed and defined by the Committee or Working Group chair.

5.3.3 Protocol Specifications

The goal of this working group is to define the detailed protocols for data and communications across the various open interfaces within the system. The interfaces are limited to what is the minimum needed for implementation of an open and interoperable system. Other interfaces may be included later. The objective is to use common interfaces and as light of a protocol as possible to allow for innovation and development of the subsystems in a healthy competitive environment while preserving the openness of the system.

FY2017 Goal

WG3's charter is to define the detailed protocols for data and communications across the various open interfaces within the system. In FY2016, WG3 successfully delivered Interim Technical Specifications for:

- SAS-SAS Protocol Specification: Protocol specification between different SAS systems
- SAS-CBSD Protocol Specification: Protocol between devices and SAS system and may be the same as the above protocol

WG3's FY2017 goal is to continue to develop and refine protocol standards for the CBRS system, building upon current work product.

Standards Deliverables:

WG3 has defined two Version 1 and two Version 2 deliverables for FY2017. In each phase, a SAS-to-CBSD and SAS-to-SAS protocol specification will be delivered. These specifications will address:

- Change requests
- Additional requirements developed by WG1 and/or WG2 that may have protocol impacts.
- Rule changes resulting from the FCC's Second Report and Order on CBRS.

Delivery Plan:

The Version 1 deliverables are targeted for mid August 2016 and the Version 2 deliverables are targeted for mid December 2016.

Group member activity and participation are high and the group regularly receives contributions of very high quality. In the opinion of the Group Chairs the stated deliverables have a high likelihood of successful completion by the scheduled date.

5.3.4 Testing and Certification

The goal of this working group is to define the test and certification standards for the SAS and across the various interfaces within the system. The certification should be limited to what is the minimum needed for the creation of a simple and standard certification process for an open and interoperable system. The objective is to implement a test architecture that enables a competitive, innovative, and open environment for the development of the SAS and other ecosystem elements.

FY2017 Goal

WG4's charter is to develop test and certification standards for the shared spectrum ecosystem, including SAS, ESCs, CBSDs, and End User Devices. For FY2017, the Working Group focused on developing a test framework – including the methods, procedures, and resources – that satisfies Commission requirements for SAS certification. The group delivered a Certification Process document deliverable, two Request for Information items shared with Commission staff, and is currently developing the CBRS Test Specification Technical Report.

The FY2017 goal is to complete Version 1 and Version 2 of the CBRS Test Specification Technical Report, which will enumerate the Test and Certification of the SAS.

Standards Deliverables:

WG4 has defined a Version 1 and Version 2 deliverable for FY2017. In each phase, a Technical Report detailing relevant test cases and metrics, test automation techniques, and test infrastructure for Test and Certification program will be delivered. These specifications will address the following:

- Version 1
 - SAS Test and Certification requirements as defined by the FCC First Report and Order, WG1, WG2, and/or WG3.
- Version 2
 - SAS and ESC Test and Certification requirements as defined by the FCC Second Report and Order, WG1, WG2, and/or WG3.
 - Change requests

WG4 members may take up additional deliverables as the two primary tasks are completed.

Delivery Plan:

The Version 1 deliverable is targeted for mid September 2016 and the Version 2 deliverable is targeted for mid January 2017.

Group member activity and participation is increasing regularly. In the opinion of the Working Group Chair the Version 1 deliverable has a high likelihood of successful completion by

September 2016. Completion of the Version 2 deliverable is highly dependent upon work product of other WGs and, as such, there is some risk that this deliverable may be delayed. However, no more than one quarter of slippage is expected at this time.

6 Board of Directors FY2017 Work Plan

A primary responsibility of the Board of Directors in FY2017 is monitoring the operations of the Forum ensuring compliance with the 2014 to 2017 Strategic Plan and this Operations Plan. Meetings of the Board of Directors are planned for the following dates:

- Web conferences the second Thursday of each month at 10AM Eastern US Time
- October 2016 in Paris, France (in conjunction with WinnComm-Europe)
- March 2017 in San Diego, California (in conjunction with WinnComm)

Additional interim Board Meetings may be scheduled as required.

An additional key role of the Board of Directors is monitoring the financial performance of the Forum. The CEO will send the status of membership and the updated FY2017 financial forecast to the Board monthly. In addition, the financial performance is reviewed following the schedule below:

- October 2016 Board Meeting – Review the audited financial results for FY2016 to be presented to the members at the Annual, and the Q1 FY2017 forecast with projections for the remainder of the year.
- Annual Meeting of the Members – Present FY2017 audited financial results to the members, present updated FY2017 projections
- March Board Meeting – Review Q1 and Q2 FY2017 unaudited financial results and projections for the remainder of the year.
- June Board Meeting – Review the FY2017 forecast and approve the FY2018 Operation Plan and Budget and submit to the membership for approval.

Additional work by the Board to monitor performance and explore strategy is undertaken by the following Board committees:

- **Audits Committee** – Provides board oversight of the organization’s annual financial audit, including reviewing the adequacy and reliability of the Forum’s internal controls and financial reporting, review the independence of and performance of the Forum’s external auditor, review alleged violations of the Forum’s stated policies, and reports to the board on recommendations. Chair: Assigned by the Chair of the Board
- **Finance Committee** – Provides board oversight of the Forum finances including recommending financial policies and internal controls, reviewing the annual budget prepared by staff and recommending it to the full board for approval, and monitoring financial reports prepared by the staff, including monitoring of investments, against the approved budget. Chair: Treasurer

- **Employee Compensation and Contractor Performance Committee (ECCP)** – as defined in the Forum’s [Bylaws](#)
- **Governance and Policy Committee** – provides oversight and assessment of the Board, identifies requirements for Board orientation and education. Reviews current best practices and governance trends and makes recommendations to the full board on bylaws and policies. Chair: Secretary
- **Nominating Committee** – As defined in the Forum’s [Bylaws](#). The 2015 Nominating Committee is formed by the Chair of the Board of Directors on or before the start of the June General Meeting, and presents the proposed slate of Directors to the Board at the October 2014 Board meeting.
- **Outreach Committee** – provides input to the Board on venues and events that the Forum should have representation in attendance.

7 Infrastructure and Support Services

Through multiple projects and activities, Forum staff will work to support and further the Forum's seven high level objectives. Projects are outlined below, with reference to which high level goals they support.

7.1 Platform Strategy

High Level Objectives Supported:

- Brand the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
- Identify New Market Area Relevant to the Forum's Mission
- Establish Relevant Projects
- Improve Regional Support
- Grow Revenue

At the time of this writing a three stage FY2017 Platform Strategy plan below was being executed:

- Stage 1: Research
 - Outlined group case studies
 - Conducted member interviews
 - Re-segmented markets
- Stage 2: Product Strategy
 - Defined platform elements/developed positioning statement
 - Identified marketing mix
- Stage 3: Product Execution
 - Developed collateral
 - Developed storylines for group successes
 - Developed project support materials (templates, policies, etc.)

The resulting positioning statement is below:

*For individuals striving to set their organization apart and achieve their market goals in their particular wireless industry, **who** need an ideal setting for incubating and advancing new potentially disruptive technologies, specifications or guidelines, **the Wireless Innovation Forum is** a member driven, standards development organization **that** brings together groups of leading organizations from across multiple market segments around the world and at all levels of the wireless value chain to collaborate in advocating for the innovative use of spectrum and advancing radio technologies that support essential or critical communications worldwide.*

***Unlike** other group collaboration organizations that are focused on lobbying for a specific segment of the wireless market, **the Forum will** act as an honest broker in advancing technology supporting an ecosystem that spans multiple markets and bring you together with other thought leaders in a multi-stakeholder community to create highly recognized reports, specifications and recommendations.*

*Also unlike other standards bodies focused on supporting the wireless market, **the Forum is agile**, providing a venue for thought leaders to quickly build an ecosystem and rapidly advance projects under a proven development model that can be tailored to your specific needs and under IPR terms aligned with Industry best practices.*

Additional elements of the platform strategy to be executed in FY2017 are outlined below.

7.1.1 Continued Product Execution

Per the Platform Strategy, Forum staff will work to complete the following in FY2017:

- The Forum will evaluate staff required to support the commercialization framework and make adjustments as required to meet member needs.
- Forum Staff will work with the Board of Director's Governance Committee to review relevant policies and make associated recommendations to the Board.
- Forum staff will work to update the tool chain currently used based on feedback received in FY2016. This includes:
 - Defining a process to ensure a smooth transition to the updated tool set
 - Providing ongoing member training
 - Establishing a process for providing an ongoing assessment of the tools in meeting with strategic goals to allow for continual improvements.

7.1.2 Marketing Strategy

For FY2017, Forum staff will focus on developing content on the web site, designing promotional materials and executing a marketing mix that will most effectively and efficiently promote the Forum's "Commercialization Framework". A detailed marketing plan and budget supporting this strategy will be developed in the first Quarter and presented to the Board for approval in the October 2016 Board meeting.

7.1.3 Member Retention

Both new member marketing and current member retention are priority aspects in generating revenue. With the Forum's diverse and growing market segments (Spectrum Sharing, SCA, etc.) the audiences are quite different for each segment. As such, staff will produce separate promotion sites for each committee audience detailing outputs, benefits to members, current members specific to this group, etc. In addition, staff will update the membership benefits page to better reflect and highlight current benefits.

Also important to member retention is member onboarding. Forum staff will refine our onboarding procedure to welcome our members and train them on the groups collaboration site.

Tools will include scheduled emails, training videos and supporting documentation. Staff will also update the messaging in our renewal communications to better encourage retention.

7.2 Member Services and Group Support

High Level Objectives Supported: All

7.2.1 Project Support

Forum staff will support each steering group in the establishment and maintenance of project roadmaps, including identifying and presenting a “watch list” of strategic issues that must be evaluated and tracked to each steering group on a monthly basis. Staff will also collect additional data pertaining to each watch list issue, as required for follow up by the steering groups.

The Forum’s staff will work with Forum leadership to provide the facilities, infrastructure and services necessary for the members of the Forum’s standing Committees to collaborate as required to achieve the objectives stated in this operations plan. Specific services defined for FY2017 as necessary in achieving the high level goals comes are:

- Remote Collaboration Services. Much of the work of the Forum’s members is done using electronic utilizing the following tools provided by the Forum:
 - Webconferencing: A Go To Meeting account has been established for each committee. In addition, the Forum maintains a Go To Webinar account which can be used to host online workshops as required.
 - Online Communities: A collaboration area has been established for each work group, task group and special interest group on the Forum’s “Groups Portal” (<http://groups.winnforum.org>). Each collaboration area can host multiple project specific file libraries, list servers and wikis.

Forum staff will support its members in making use of these services as required, including supporting group leaders in maintaining portal communities, scheduling and hosting web meetings, and organizing workshops.

- Face to Face Meeting and Event Services. The Forum will provide complete meeting and event services as required, including planning, registration management, site selection and facilities management, speaker management and agenda/program development for ad-hoc project meetings, committee meetings, workshops and conferences. Where possible, meetings will be hosted at the Forum’s offices in Reston, Virginia or at member facilities.

Staff will create and maintain the supporting communication vehicles for the events including web presence and print publication as well as promotion through press releases, email campaigns, social media and sell sheet distribution when applicable.

- Project Facilitation and Management Services. Forum staff will provide services throughout the lifecycle of member projects as follows:
 - Project Initiation, including supporting the development of project proposals
 - Project Support, including schedule and budget management, tracking risks, soliciting contributions, following up on action items with volunteers and reporting
 - Editorial services, including graphics design, to ensure project reports, recommendations and specifications have a professional look and feel
 - Document Advancement and Electronic Balloting

7.2.2 Project Promotion and Committee Brand Management

Forum staff will support all three committees in outreach activities to grow participation and gain new members. This includes providing support to the CCSCA Advocacy Work Group and the proposed SSC Awareness Group, to include:

- Maintaining an active external web page for each committee highlighting
- Press release announcement of approved projects and final work products
- Social media and email campaigns to inform the community of progress and grow participation
- Hosting webinars providing a tutorial review of relevant work products and printing these webinars on You Tube
- Developing and editorial pitch when appropriate to promote activities and results.
- Print materials for distribution at partner conferences and events to include sell sheet and media packet.

In providing these services, Forum staff will leverage the SDR Standards logo developed last year to establish a brand extension for each committee. (See 7.1.1.3 as well.)

In addition, staff will undertake an ongoing review of the Forum's communication vehicles to ensure a dynamic and efficient response to member needs and opportunities for member promotion using these vehicles, such as product announcements, event announcements, etc.

7.2.3 Daily News Feed

Feedback provided by members in satisfaction surveys and one on one interviews indicates that the daily news feed provided by the Forum is a key value provided by the Forum and so as a part of our member retention strategy, Forum staff will continue this service in FY2017 as well as

explore ways to expand the value, such as, for example, including one banner ad per week (additional revenue) by sponsor.

7.3 Conference Management and Promotion

High Level Objectives Supported:

- Brand the WInnForum as the Preferred Venue for the International Spectrum Sharing Community
- Improve Regional Support
- Grow Revenue

The US and European Conferences act as primary vehicles for the Forum's members to network with the community and gain insight into current trends in SDR, CR and DSA technology. These conferences are a key element of the Forum's brand, and so Forum staff will work to strengthen both the conference programs and participation. All conference content is to be largely driven by the Forum's individual committees, Forum staff will work to encourage the committees to participate and develop the content.

Positioning of the Forum's conferences shall remain as follows:

***For** Radio Manufacturers, System Integrators, Procurement Authorities and End User Representatives, **Who** need to understand technical, regulatory and business advances supporting the innovative utilization of spectrum and advanced radio technologies supporting essential or critical communications, WInnComm is a technical conference **That** provides a venue for members to network with and learn from the leading innovators in the advanced wireless market to gain a functional knowledge of relevant emerging opportunities and technologies.*

Plans for each conference are as follows:

7.3.1 WInnComm-Europe 2016

WInnComm-Europe 2016 will be held 11 to 12 October 2016 in Paris, France. Important dates for this conference in FY2017 are as follows:

- Paper accepted notification: 10 June 2016
- Final, camera-ready manuscript due: 23 September 2016

Forum staff supports the technical program committee in defining conference and workshop topics, which are to be largely driven by the committees, issuing the call for proposals, collecting and reviewing abstracts, reviewing papers and setting the program.

All operations of conference events from pre-conference services such as registration and exhibits management to onsite services will be conducted in to the highest degree of

professionalism and membership service. Staff will look to maximize the meeting experience for all attendees while focusing on efficiency and economies.

Satisfaction surveys by attendees will be used to determine attendee satisfaction, perceived problems, and potential improvements. The survey results will be used to guide plans for future conferences.

Forum staff will continue to place a priority on promoting the conference in order to increase attendance as well as brand recognition. The event web page, which is the primary public presence for the event will be updated frequently to ensure that it is dynamic, as well as reviewed often for accuracy and brand consistency. The web page and event will be promoted through press releases, email distribution and social media mentions. All communications vehicles will carry the same consistent branding presented on the web page. In addition, Forum staff will design and produce event proceedings for the conference, which will be distributed online by the same method used for WInnComm 2016, which was very successful.

In FY2013, the Forum reduced printing costs substantially by omitting a printed conference schedule for the US event and communicating to conference attendees that the show schedule and communication would be primarily electronic. This was received very favorably. Staff will continue to pursue this option for the European conference as well as explore avenues to cut cost without sacrificing effective communication and promotion.

7.3.2 WInnComm 2017

WInnComm 2017 will be held in 28 to 29 March 2017 in La Jolla, California. Important dates for this conference in FY2017 are being defined now, but will be similar to the WInnComm 2016 dates. Proposed dates for WInnComm 2017 are shown in parentheses:

- Proposal Abstracts Due: **October 7, 2016**
- Abstract Acceptance: **October 17, 2016**
- Draft papers due: **December 16, 2016**
- Workshop and Tutorial Abstracts due: **December 16, 2016**
- Acceptance notifications: **February 17, 2017**
- Final Papers Due: **March 3, 2017**
- Presentations Due: **March 24, 2017**

As with the European Conference, Forum staff will support the technical program committee in defining conference and workshop topics, which are to be largely driven by the committees, issuing the call for proposals, collecting and reviewing abstracts, reviewing papers and setting the program. For FY2017, this may be a poster session to be held in conjunction with the conference exhibition.

All operations of conference events from pre-conference services such as registration and exhibits management to onsite services will be conducted in to the highest degree of professionalism and membership service. Staff will look to maximize the meeting experience for all attendees while focusing on efficiency and economies.

Satisfaction surveys by attendees will be used to determine attendee satisfaction, perceived problems, and potential improvements. The survey results will be used to guide plans for future conferences.

Forum staff will continue to place a priority on promoting the conference in order to increase attendance as well as brand recognition. The event web page, which is the primary public presence for the event will be updated frequently to ensure that it is dynamic, as well as reviewed often for accuracy and brand consistency. The web page and event will be promoted through press releases, email distribution and social media mentions. All communications vehicles will carry the same consistent branding presented on the web page. In addition, Forum staff will design and produce event proceedings for the conference, which will be distributed in an online store. The availability of the proceedings in a public marketplace will help advance the Forum's brand and help establish the Forum as a leader in producing technical publications.

Staff will employ a similar email schedule to that used in WInnComm 2016 to increase readership rates and conversions to attendance.

7.4 Annual Awards

The Forum will launch the 2016 Awards program in November, with nominations pursued in emails, and on the web site. Finalists will be announced in December 2016, and will be encouraged to attend the March conference where winners will be announced and receive their awards. Technical Achievement nominees will be given the offer of a free booth in the exhibit hall to demo the technology.

8 Other Corporate Administration

8.1 Annual Meeting of the Members

The Annual Meeting of the Members, as described in the Forum [Bylaws](#) will be held in at the Forum's headquarters location in Washington DC in early December.

8.2 Corporate Filings

The Forum will continue to evaluate and improve internal office functions related to financial controls and reporting, archival storage of documents, and membership initiation and renewal. Finance and Accounting Procedures will be updated in Q1 FY2017 to reflect modifications of the membership renewal process as well as the process for managing Value Added Tax in our European Events.

In addition, the Forum shall ensure filings as follows:

- 990 filing with the IRS – 15 November 2016
- California Tax Exempt Return – 15 November 2016
- Canadian Information Return – 15 November 2016
- Canadian Extra-Provincial Annual Report – 2 January 2017
- 1099s to recipients – 31 January 2017
- 1099 and 990s to IRS – 28 February 2017
- Foreign Bank Account Report Form – 30 June 2017
- Fairfax County, VA Business, Professional, Occupational License-01 March 2017
- Fairfax County, VA Personal Property Tax-01 May 2017
- Virginia Corporate Commission Report-30 April 2017

8.3 Insurance

In addition, the Forum shall perform an insurance review (D&O, E&O, Liability, etc.) to be completed to be completed in advance of the renewal date.

- Error and Omissions Insurance: August 2016
- General Liability Insurance: August 2016
- Directors and Officers Insurance: January 2017

In addition, the Forum will secure cancellation insurance, as appropriate, for each major event.

8.4 FY2018 Planning Cycle

The FY2017 Operation Plan will be developed on the following schedule:

- Board Approval of High Level Goals for FY2017 – 28 March 2017
- High Level Goals and Ops Plan Process Presented to Group Leaders – 29 Mar 2017
- Draft Budget Presented to the Finance Committee – 1 May 2017
- Draft Plan Submitted to Officers – 22 May 2017
- Final Draft Approved by Forum Chair and CEO – 2 June 2017

The final plan will be presented to the Board of Directors for their approval during the 15 June 2017 Board Meeting, and will be submitted to the membership for final approval immediately thereafter.